Work Order ID 61733

Tuesday, August 31, 2010 3:13:54 PM



Page 1

Item ID:

D206-667-103TRN

Accept



Setup

Start

Stop

Revision ID:

Item Name:

Crosstube Turning DetailL

Start Date:

Required Date: 9/13/2010

8/31/2010

Start Qty: 1.00

Req'd Qty: 1.00



Cust Item ID:

Customer:

Reference:

Approvals:

Process Plan:

QC:

Date: 10-8-3/ Tooling: Date:

Date:

Date:

Run

Start Stop



SPC (Y/N):

Tool # Plan

Accept

Reject

Insp.

Sequence ID/ Work Center ID **Operation Description**

Revision Nbr

Set Up/ **Run Hours**

Tool ID

Code Qty Reject Qty

Number

Stamp

Draw Nbr

D206-667-143 Rev C

100

Mori Seiki CNC Lathe Large

Mori Seiki

MORI SEIKI CNC LATHE LARGE

Memo

0.00

0.00

1-Fill tube with sand & install plugs DT8534 on both ends as per Folio FA087 □ 2-Turn first side as per Folio FA087 □ 3-File down transition lines

smooth.

110

Quality Control

0.00

Memo

QC1- Inspect dimensions to dimension sheet

0.00

120

Mori Seiki

0.00

0.00

Mori Seiki CNC Lathe Large

Memo

MORI SEIKI CNC LATHE LARGE

1-Turn second side as per Folio FA087 \(\pi 2\)-File down transition lines smooth.

3-Remove sand and plugs

W/O:			WC	ORK ORDER CHANG	ES				
DATE	STEP	PRO	OCEDURE CHA	NGE	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
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Part No		PAR #:	Fault Cate	gory:	_ NCR: Yes	No DQ	A:	_ Date: _	
	Re	solution:	Dispositio	n:	_ QA: N/C C	losed:		Date: _	
NCR:			WORK ORD	ER NON-CONFORMA	NCE (NC	R)			
DATE	OTED	Description of NC		Corrective Action Secti		Verific	cation	Approval	Approval
DATE	STEP	Section A	Initial Chief Eng	Action Description Chief Eng	Sign Date		ion C	Chief Eng	QC Inspector
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Work Order ID 61733

Required Date: 9/13/2010

Tuesday, August 31, 2010 3:13:54 PM



Page 2

Item ID:

D206-667-103TRN

Accept

Setup Start



Revision ID:

Item Name: Crosstube Turning DetailL

Start Date:

8/31/2010

Start Qty: 1.00

Req'd Qty: 1.00

Date:_____

Cust Item ID: Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

SPC (Y/N):

Date: Date:

Start Run

Stop



Sequence ID/ Work Center ID

130

Operation Description

QC1- Inspect dimensions to dimension sheet

Set Up/ **Run Hours**

0.00

0.00

Tool ID

Tool # Plan Code

Accept Qty

Reject Qty

Reject Insp. Number

Stamp

Quality Control

140

QC

Quality Control

QC8- Inspect parts - second check

Memo

Memo

150

HandFXtube

Hand Finishing Crosstubes

Crosstubes Chemical Conversion

0.00

Memo

0.00

W/O:			W	ORK ORDER CHANG	ES					
DATE	STEP	PRC	OCEDURE CH	IANGE		Зу	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
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DATE	STEP	Description of NC Section A	Initial	Action Description	tion B	Sign &		cation ion C	Approval Chief Eng	Approval QC Inspector
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Work Order ID 61733

Tuesday, August 31, 2010 3:13:54 PM



Page 3

Item ID:

D206-667-103TRN

Accept



Setup Start

Stop



Revision ID:

Item Name:

Crosstube Turning DetailL

Start Date:

8/31/2010

Start Oty: 1.00

Required Date: 9/13/2010

Req'd Oty: 1.00



Date:_____

Cust Item ID:

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

SPC (Y/N):

Date:

Date:

Run

Start

Stop



Qty

Sequence ID/

Work Center ID

160

Quality Control

Operation Description

QC3- Inspect Part Finish

Memo

Set Up/

Run Hour 0.00

0.00

Tool ID

Tool # Plan Code Accept

Reject Oty

Reject Insp. Number Stamp

170

Packaging Packaging

Packaging

Memo

0.00

0.00

Identify and stock in kanban rack □Location: L

SAD 10-09-08

180

Quality Control

Memo

QC21- Final Inspection - Work Order Release

0.00

0.00

10 109 109 95 M 10-9-08

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		WO	RK ORDER CHANGES	}			The second second		
STEP	PR	OCEDURE CHAN	IGE	Ву	Date	Qty	Approval* Chief Eng / Prod Mgr	Approval	
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:	PAR #:	Fault Categ	ory:	NCR: Yes	No DQ	\ :	_ Date: _	<u> </u>	
Re	esolution:	Disposition	•	QA: N/C Cld	osed:		Date: _		
		WORK ORDE	R NON-CONFORMAN	CE (NCR)				
STEP	Description of NC Section A	Initial Chief Eng	Corrective Action Section I Action Description Chief Eng				Approval Chief Eng	Approval QC Inspector	
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	STEP	:PAR #: Resolution: STED Description of NC	STEP PROCEDURE CHAN PAR #: Fault Category Resolution: Disposition WORK ORDE STEP Description of NC	WORK ORDER CHANGES STEP PROCEDURE CHANGE :PAR #:Fault Category: Resolution:Disposition: WORK ORDER NON-CONFORMAN STEP Description of NC Section A Corrective Action Section Initial Action Description	STEP PROCEDURE CHANGE By PROCEDURE CHANGE By PAR #: Fault Category: NCR: Yes Resolution: Disposition: QA: N/C Clo WORK ORDER NON-CONFORMANCE (NCR STEP Description of NC	STEP PROCEDURE CHANGE By Date	STEP PROCEDURE CHANGE By Date Qty :PAR #:Fault Category:NCR: Yes No DQA: Resolution:Disposition:QA: N/C Closed: WORK ORDER NON-CONFORMANCE (NCR) STEP Description of NC	STEP PROCEDURE CHANGE By Date Qty Approval Chief Eng Prod Mgr	

Picklist Print

Tuesday, August 31, 2010 3:13:58 PM

Work Order ID: 61733

Parent Item:

D206-667-103TRN

Parent Item Name: Crosstube Turning DetailL



Start Date: 8/31/2010

Required Date: 9/13/2010

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP Rev:A 08-03-06 new issue DD verified by:ec

IPP Rev B 08.04.02 removed polish EC verified by DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6002-115		Manufactured	No		-	110	Each	52.0000	1	1			-
										MB	10-0	9-0	\

Crosstube Material

Location Loc Code LG 34684 34776

W/O:			WORK ORDER CHANGES					
DATE	STEP	PROCEDUR	E CHANGE	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
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]				
Part No): D20	06-657-103TRNDAR#: Fau	It Category: Y-Lisbe N	ICR: Ye	No DO	A: 1	Date: 4	5 25.131
				A: N/C			_ Date: _	

NCR:61	733	W	WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Initial Chief Eng	Corrective Action Section B Action Description	Sign & Date	Verification Section C	Approval Chief Eng	Approval QC Inspector		
16.05.07	100	Cuff O.D. below tolerance by 0,004	Chief Eng	Acceptable	MP of	10/05/08	P 10.09.67 QSI 02/2	2		
		R.L. affect wrong on cure any. 1st side. & Process	45) 47				QSI 042	10/09/08		
				•						

DART AEROSPACE LTD	Work Order:	61733
Description: Crosstube Assembly (206L High Fwd)	Part Number:	D206-667-143
Inspection Dwg: D206-667-143 Rev: B C		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

X	First Article	Prototype
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2.240 +0.005/-0.000 2.236		nspection Sheet awing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments	
1.982		2.240	+0.005/-0.000	2.236	-	1	CAtiner	Acceptable Mp.	54,5
2.058		1.982	+0.005/-0.000		V			1 1	
2.058		2.019	+0.005/-0.000	2.021	V_		-	·	
2.136		2.058	+0.005/-0.000	2.067	~		~-		
2.136		2.097	+0.005/-0.000	2.101			٠-		
2.201 +0.005/-0.000		2.136	+0.005/-0.000	2.141	1		**	*	
0.125	⋖	2.176	+0.005/-0.000	2:150	1,		2		
0.125	핌	2.201	+0.005/-0.000	2.206	V				
0.400 x 30°	တ						~		
R0.063 +/-0.010 R 0.062 V R0.500 +/-0.010 R 0.500 V 4.438 +/-0.030 4.439 V 2.240 +0.005/-0.000 2.239 C Aliren Acceptable 41 1.982 +0.005/-0.000 1.782 C 2.019 +0.005/-0.000 2.019 V 2.058 +0.005/-0.000 2.019 V 2.097 +0.005/-0.000 2.099 V 2.136 +0.005/-0.000 2.099 V 2.136 +0.005/-0.000 2.140 V 2.176 +0.005/-0.000 2.140 V 2.201 +0.005/-0.000 2.140 V 7.70 8.1063 +/-0.010 0.125 V R0.063 +/-0.010 R0.063 V R0.500 +/-0.010 R0.063 V	i I	0.125	+/-0.010	,125	-		~		
R0.500		0.400 x 30°	+/-0.010	0.400 30	V		n		
R0.500 +/-0.010 R0.500 V 4.438 +/-0.030 Y.439 V 104.98 +/-0.020 /0 4.98 V 2.240 +0.005/-0.000 2.238 1.982 +0.005/-0.000 1.982 - 2.019 +0.005/-0.000 2.019 V 2.058 +0.005/-0.000 2.019 V 2.058 +0.005/-0.000 2.019 V 2.136 +0.005/-0.000 2.019 V 2.136 +0.005/-0.000 2.140 V 2.176 +0.005/-0.000 2.140 V 2.201 +0.005/-0.000 2.140 V 2.201 +0.005/-0.000 2.140 V R0.603 +/-0.010 0.125 V R0.603 +/-0.010 R0.063 V R0.500 +/-0.010 R0.050 V		R0.063	+/-0.010	R.O.063			~		
4.438		R0.500	+/-0.010		V		~		
1.982		4.438	+/-0.030				"		
1.982									
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2.058		1.982	+0.005/-0.000	1.982	\				,
2.058		2.019	+0.005/-0.000	2.019	\		<i></i>		
2.136 +0.005/-0.000 2.140		2.058	+0.005/-0.000				~		
2.176 +0.005/-0.000 2,176 / 2.201 +0.005/-0.000 2.300 / 0.125 +/-0.010 0.125 / 0.400 x 30° +/-0.010 0.400x 30 / R0.063 +/-0.010 R0.063 / R0.500 +/-0.010 R0.500 /		2.097	+0.005/-0.000	2.099			^		
2.176 +0.005/-0.000 2.746		2.136	+0.005/-0.000	2.140			· -		
2.201 +0.005/-0.000 2.202 / 0.125 +/-0.010 0.125 / 0.400 x 30° +/-0.010 0.400x 30 / R0.063 +/-0.010 R0.063 / R0.500 +/-0.010 R0.500 /	83	2.176	+0.005/-0.000	2,176	1				
0.125 +/-0.010 0.125 V 0.400 x 30° +/-0.010 0.400 x 30 V R0.063 +/-0.010 R0.063 V R0.500 +/-0.010 R0.500 V	Oi.	2.201	+0.005/-0.000		, /		~ <u>-</u>		
0.400 x 30° +/-0.010 0.125 0	υ,								
R0.063 +/-0.010 R0.063 V ~~ R0.500 +/-0.010 R0.500 V ~~		0.125	+/-0.010	0.125			-/		
R0.063 +/-0.010 R0.063 V ~~ R0.500 +/-0.010 R0.500 V ~~		0.400 x 30°	+/-0.010	0.400x30°	V'		v_		
R0.500 +/-0.010 R 0.500 V		R0.063	+/-0.010				~		
4.438 +/-0.030 -/, 439		R0.500	+/-0.010	20.500					
		4.438	+/-0.030	4,439			10		

	1 /			
Measured by:	MB	Audited by:	Prototype Approval:	N/A
Date:	10-09-02	Date: 10/0/08	Date:	N/A

Rev	Date	Change	<u> </u>	Revised by	Approved
Α	04.05.06	New Issue (P/C	O D206-667-103)	KJ/RF	1
В	06.03.09	Dwg Rev updated		KJ/JLM A	_ (////
					

Dart Ae	rospace	e Ltd							
W/O:			W	ORK ORDER CHANGE	S				
DATE	STEP	PROCEDURE CHANGE				Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
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Part No	:	PAR #:	Fault Cate	egory:	NCR: Yes	No DQ	A:	Date:	
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NCR:			WORK ORD	ER NON-CONFORMAL	NCE (NCR	1)			
		Description of NC		Corrective Action Section	n B	Verific	cation ·	Approval	Approval
DATE	STEP	Section A	Initial Chief Eng	Action Description Chief Eng	Sign & Date		ion C	Chief Eng	QC Inspector
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ltem	Qty -143	Part Number	Description
1	х	D206-667-143	CROSSTUBE ASSEMBLY (206L HIGH FWD)
2	1	D6002-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2891-1	SUPPORT
6	4	D3595-063-395	RUBBER CUSHION
7	4	MS21920-20	CLAMP (OR MS21920-21)
- 8	14	MS20601AD4W8	RIVET (OR NAS9302B-4-8)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120- 023 ADHESIVE (TEXTRON/BELL SPEC. 299- 947-100, TYPE II, CLASS 2 ADHE SIVE)

GENERAL NOTES:

8

- 1) MATERIAL: MANUFACTURED FROM D6002-115 FINISHED LENGTH = 104.98±0.020
- 2) FINISH: CHÉMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2 PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- UNITS: INCHES UNLESS OTHERWISE NOTED.
- BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-143" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 15.5 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY. TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 10 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2891-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-20 CLAMPS (OR -21) WITH D3595-063-395 RUBBER CUSHIONS TO SECURE THE D2891-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

SHOP COPY RETURNIE ENGINEERING) UNCONTROLLED CON SUBJECT TO APPLICATION

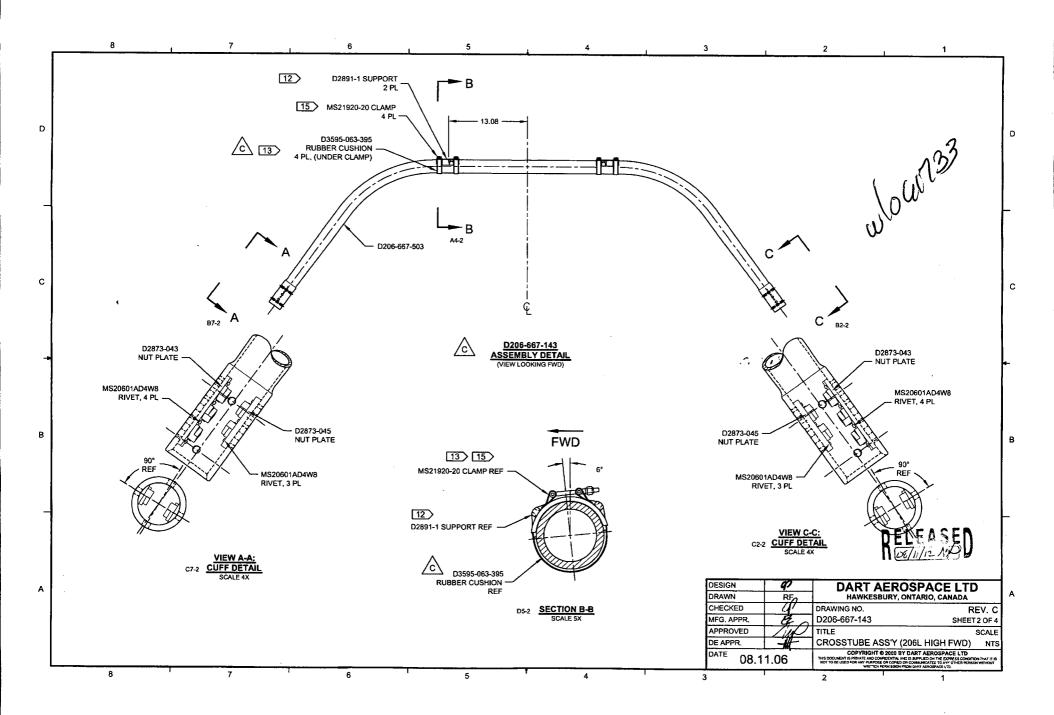
С	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-395 WAS D2856-400-694 (ZN D6-2 & A5-2); REMOVED REF. & ADD TOLERANCE (ZN D3-3, C4-3, C5-3); RELOCATED FLAG #6 (ZN A8-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.							
В		DLES AND NUT HT/AA SKUDTU	PLATES FOR COMPATABILITY JBES	РН	05.07.26			
Α	NEW ISSUE				00.11.17			
REV.	DESCRIPTION				DATE			
DESIGN		P	DART AEROSPACE LTD					
DRAWN		RF ₂	HAWKESBURY, ONTARIO, CANADA					
CHECK	ED	a	DRAWING NO. REV					
MFG. APPR.		20	D206-667-143 SHEET 1 OF					
APPROVED /		/in	TITLE SCALE					
DE APPR.		#	CROSSTUBE ASS'Y (206L HIGH FWD) NTS					
DATE 08.11.06			COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CORPUSENIA MUST IS SUPPLIED ON THE EXPRESS CONSTITUTION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OF COMPLIED AT COMPLICATE TO ANY OTHER PROCEDING HIDDU					

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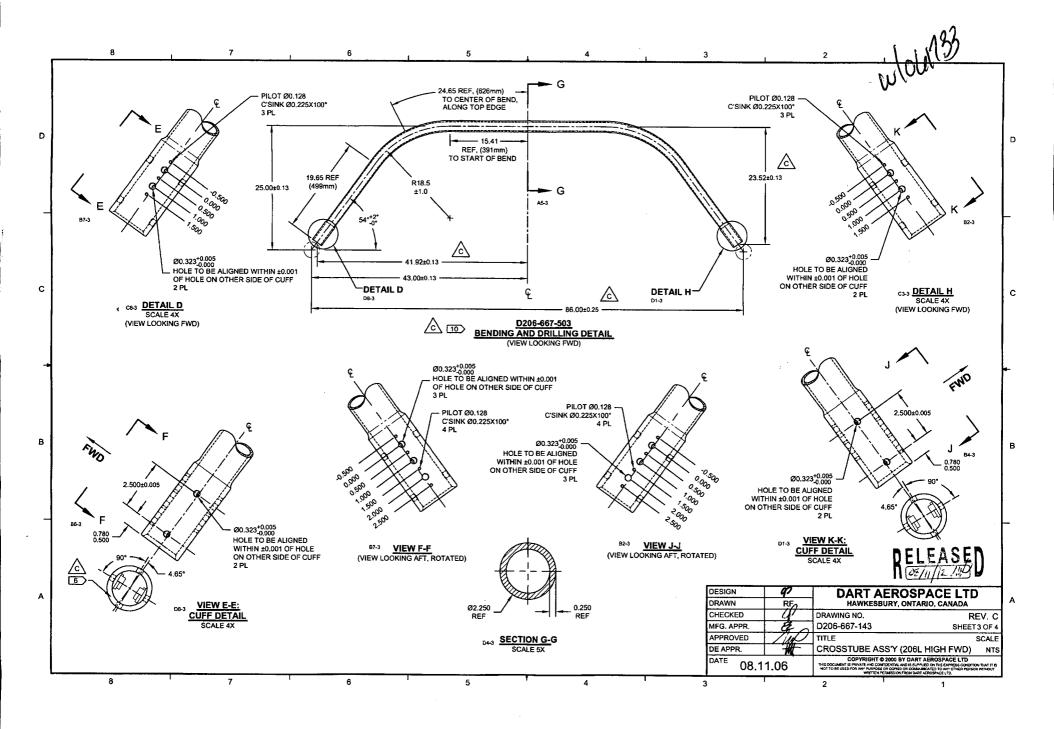
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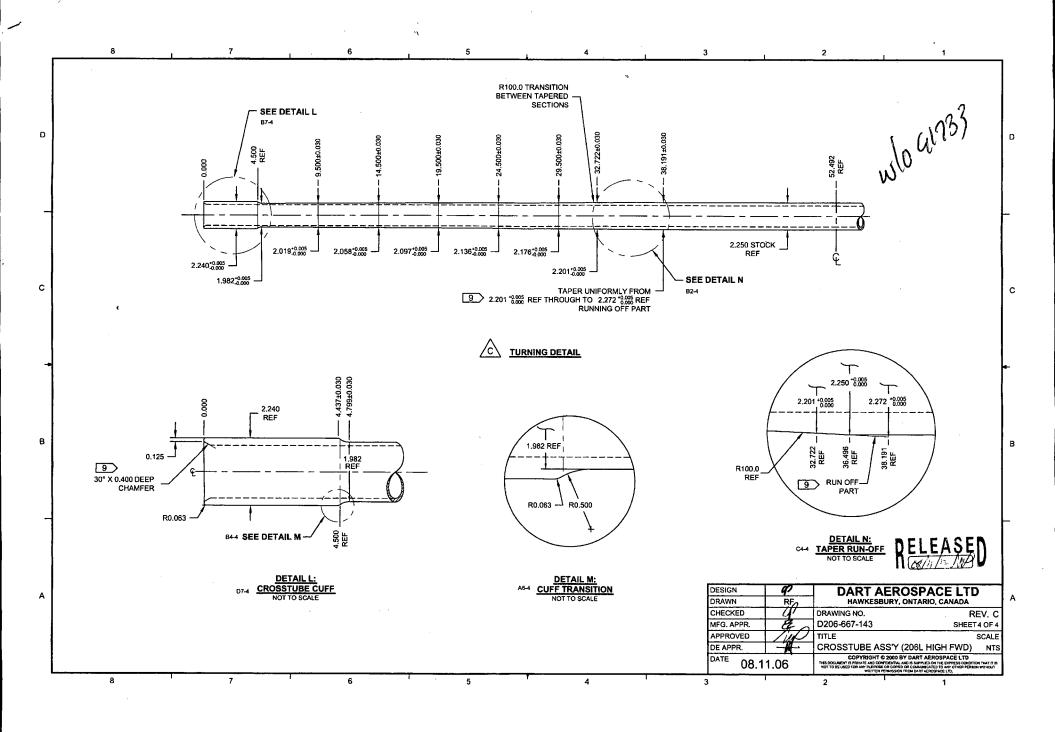
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D.4.T.E	0755	Description of NC	Corrective Action Section			Verification	Approval	Approval			
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Section A Chief Eng Chief Eng Date Section C Chief Eng do inspector